

**THREE NEW SPECIES OF TRICHOPTERA
(ODONTOCERIDAE, LEPTOCERIDAE) AND THE
FAUNISTIC LIST FOR ZONGULDAK AND KARABÜK
PROVINCES IN NORTHWESTERN TURKEY**

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ABSTRACT: Three new species of Trichoptera from Turkey are described and illustrated: *Odontocerum turcicum* sp. n. (Odontoceridae), *Adicella hadimensis* sp. n., and *A. kayserica* sp. n. (Leptoceridae). The faunistic list of Trichoptera for Zonguldak and Karabük provinces in northwestern Turkey including 47 species is given. Among them *Potamophylax pallidus* Klapalek, 1899 is newly recorded for Turkey.

KEY WORDS: Taxonomy, faunistic, new species, new record, Trichoptera, Zonguldak, Karabük, northwestern Turkey.

The genus *Odontocerum* Leach 1815 has three species in the west Plearctic Region. *O. albicorne* Scopoli 1763 was the first described species found in Europe; later *O. hellenicum* Malicky 1972 (Malicky, 1972) was described from Greece and *O. lusitanicum* Malicky 1975 (Malicky, 1975) from Portugal. In Turkey *O. hellenicum* was recorded from Kazdağ in western Anatolia, and later from Giresun and Ordu provinces (Sipahiler, 2010).

The genus *Adicella* is represented in Turkey by 10 species including the new species *A. hadimensis* sp. n. and *A. karserica* sp. n. described in the present paper.

The Trichoptera fauna in Zonguldak and Karabük provinces is represented by 47 species belonging to 32 genera and 19 families. Among them, 17 species are endemic to Turkey (36 %). *Potamophylax pallidus* Klapalek, 1899 is new record for Turkey.

MATERIALS AND METHODS

Materials collected from northern Turkey between 1982 and 2013 were studied. The specimens were collected by hand net and light trap with a blacklight tube (6 W), and preserved in alcohol (80%). Unless otherwise stated, the materials were collected by the author and deposited in her collection at the Biology Education Department, Hacettepe University.

DESCRIPTIONS

ODONTOCERIDAE

Odontocerum turcicum sp. n.

(Figs. 1-9)

Material. Holotype male and paratype female: Turkey, Zonguldak, Alaph, Gedikli, Bölüklü Yaylası, Tavuk Village direction, 917 m, 41° 02' N/31° 37' E, 16.8.2013, leg. and coll. Sipahiler.

Antennae yellow, maxillary palps dark brown-blackish; fore legs are blackish, only the tarsal segments are yellow; tarsi and tibia of the middle legs and femur, tibia, and tarsi of the hind legs yellow, the rest blackish; the wings dark grayish; the length of the anterior wings of male is 15 mm, of female 18 mm. The hind wing of male is excised on the anal edge and forms a blunt projection, not rounded; the costa is not straight, dilated near the base and near the distal end; the cross vein between R3 and R4 is persistent (Fig. 1).

Male genitalia (Figures 2-6). In lateral view the anterior edge of segment IX expands and forms a broad triangle with a rounded apex, dorsal part of segment narrower, in dorsal view, the dorsomedian lobe of segment IX is broad at the base, from the sides protrude triangular projections forming almost trapezoidal shape at the base, becoming narrower towards the tip. The median process of segment X is located beneath the dorsomedian lobe of segment IX, which is broader and longer, possessing a small additional lobe at the tip; the side parts of segment X are long, laterally broad at the base, the ventral margin is roundly and deeply excised subdistally, the distal part directed somewhat towards ventral; in dorsal view each side of segment X has a strongly sclerotized triangular projection near the middle, the rest of the side margins are smooth, without small projections. The preanal appendages are long and oval. In lateral view, the coxopodite of the inferior appendages is somewhat dilated near the base, the distal projection is long, reaching almost the half of the harpago; the harpago is short, covered apically with short and black spines. In lateral view, the phallic apparatus is narrower at the base and dilated subdistally towards dorsal; in dorsal view, the apex is broadly bilobed, inside possesses two pairs of sclerotized spines in the middle and a broad V-shaped sclerotized spine with a curved sclerotized band directed dorsally.

Female genitalia (Figures 7-9). Segment IX is blackish, the side margins are sclerotized; segment X has broadly triangular lobes dorsally; in ventral view, the posterior edge of the vulvar scale is dilated, forming a narrow and rounded lobe in the middle.

Remarks. *Odontocerum turcicum* sp. n. is closely related to *O. hellenicum* Malicky 1972 (Malicky, 1972) and *O. albicorne* Scopoli 1763 (Malicky, 2004) differs from these species by the following features: the hind wing of the males of *O. hellenicum* is rounded on the anal edge; in *O. turcicum* sp. n. the anal edge is excised and forms a projection, resembling that of *O. albicorne*; in *O. albicorne* the excision is deeper and the projection has an acuter tip than the new species; in *O. hellenicum* and *O. albicorne* a rounded lobe protrudes from the anterior edge of segment IX laterally, in *O. turcicum* sp. n. the sides of segment IX are almost triangular with rounded tips; in both related species the dorsomedian lobe of segment IX is triangular at the base, in *O. turcicum* sp. n. it has triangular projections on each side; segment X has a projection on each side of the middle of the ventral margin in both related species, which is not found in *O. turcicum* sp. n.; the distal prolongation of the coxopodite of the inferior appendage is long, a little shorter than the harpago in *O. albicorne* and very short in *O. hellenicum*, whereas in *O. turcicum* sp. n., it is long, reaching the half of the length of the harpago; in the new species the phallic apparatus is dilated dorsally on the subdistal portion and apical lobes are large and rounded, which are not prominent in the related species, and the phallic apparatus is narrower. The main differences in the female genitalia are seen in the shape of the vulvar scale, which is rather flat in *O. albicorne*, slightly rounded in *O. hellenicum* (Malicky, 2004), and is a narrow and rounded lobe in *O. turcicum* sp. n.

LEPTOCERIDAE

Adicella hadimensis sp. n.

(Figs. 10-13)

Material. Holotype: Turkey, Konya, Hadim, Yerköprü, Göksu River, 37° 05' N/ 32° 48' E, 6.6.1998, 1 male, leg. and coll. Sipahiler.

Antennae, maxillary palps, and legs, yellowish, wings pale brown; scapus and the maxillary palps are without scales; the length of the anterior wing is 6 mm.

Male genitalia (Figs 10-13). In lateral view, segment IX is very broad, somewhat narrowing on the dorsal part; in dorsal view the dorsomedian part is trapezoidal, the sides are rounded. The preanal appendages are rounded dorsally, possessing short hairs; laterally short and broad, the posterior edge is almost vertical; the dorsal lobe of segment X is broad, laterally shorter than the ventral part, ventral part is long, the dorsal edge is almost smooth, rounded on the posteroventral corner, the ventral edge roundly excised near the base; in dorsal view, the side parts of segment X diverge, the median lobe is short and broad. The inferior appendage laterally is long, broad at the base; the ventral edge is roundly dilated ventrally and narrower on the posterior portion; in ventral view, the inner edge of the basal portion is straight, the apical part is large and almost rounded, the inner edge of the apical part possesses long and thick yellowish setae, directed ventrally. The phallic apparatus has a long strip at the base, the phallosome is prominent, long, ending subdistally, the posterior margin vertically truncated; the aedeagus is slightly dilated and rounded at the tip, possessing a small sclerite, which appears U-shaped in dorsal view.

Remarks. *Adicella hadimensis* sp. n. closely resembles *A. hakkariensis* Malicky 1987 (Malicky, 1987). The following differences are seen in the male genitalia: in *A. hakkariensis* segment IX is rather narrower on the sides, only the ventral part is broader, the dorsomesal part of segment IX is triangular with a pointed apex, while in *A. hadimensis* sp. n. segment IX is very broad, only the dorsal portion is narrower, and the dorsomesal part is trapezoidal; the preanal appendage of *A. hakkariensis* is larger and longer than that of the new species; the dorsal lobe of segment X of *A. hakkariensis* is broader and laterally as long as the ventral part of segment X, while in *A. hadimensis* sp. n. the dorsal lobe is narrower and the ventral part of the segment longer; the inferior appendage of the related species has a roundly dilated inner edge in ventral view, while in the new species the inner edge is straight; the phallic apparatus of *A. hakkariensis* is without a prominent phallosome, is strongly curved near the base, and the tip is tapering, while in *A. hadimensis* sp. n. the phallic apparatus has a phallosome and the aedeagus has a rounded tip.

Adicella kayserica sp. n.

(Figs. 14-20)

Material. Holotype male and paratypes (3 male, 1 female): Turkey, Kayseri, Pınarbaşı, Sarız, Elbistan direction, Büyük Gümüşgün Village, 38° 43' N/ 36° 24' E, 1400 m, 16.6.2008; leg. and coll. Sipahiler.

Antennae pale brown yellowish, maxillary palps without scales, wings pale brown, legs, thorax, and dorsal head brown; inner surface of the scapus with black scales (Fig. 14); the length of the anterior wing of males 6.5-7 mm, of female 7 mm.

Male genitalia (Figs. 15-18). In lateral view, the anterior edge of segment IX is roundly dilated on the ventral portion; in dorsal view, the median part is long, roundly triangular, with two small triangular projections located each side of the

tip. The preanal appendages are dorsally long, almost oval; in lateral view, segment X has a finger-shaped lobe dorsally, which is long, rather broad, slightly longer than the ventral part of segment X, the ventral margin is sclerotized near the base; in dorsal view, the sides of segment X are pointed. In ventral view, the apical part of the inferior appendage is rather long and narrow, slightly dilated at the tip. The phallic apparatus is curved near the base, almost equal in breadth possessing subdistally two pair of sclerites and two long and thin sclerites, located beneath these sclerites.

Female genitalia (Figs. 19, 20). Dorsomedian part of segment IX is prolonged, narrow, and long triangular, the apex is pointed; both sides with small triangular projections; in lateral view, the median portion of segment X is broad, slightly excised in the middle; the side lobes are almost equal in breadth, rounded.

Remarks. *Adicella kayserica* sp. n. resembles *A. hakopi* Mey & Jung 1986 described from Armenia (Mey & Jung, 1986); both species have an area of scales on the scapus and no scales on the maxillary palps. The following differences are seen in the male genitalia: in *A. hakopi* the anterior edge of segment IX is slightly dilated and almost smooth on the ventral portion and the dorsomedian part is short, triangular with a pointed apex; in the new species the ventral portion of segment IX is roundly dilated on the anterior edge, dorsomedian part is long broadly triangular, with two small pointed projections on each side of the tip; in *A. hakopi* the dorsomedian lobe of segment X is as long as the ventral part of segment X and thin, in *A. kayserica* sp.n. it is long and broad, longer than the ventral part of segment X; the inner margin of the inferior appendage of *A. hakopi* is roundly dilated subdistally while in *A. kayserica* sp.n. the subdistal part is rather narrow and not dilated on the inner margin. The differences in female genitalia are as follows: in dorsal and lateral view, in *A. hakopi* segment IX is short and broadly triangular, in *A. kayserica* sp. n. segment IX is long, the median portion is narrow and long triangular, with additional small triangular projections; the side lobes of segment X are unequal in breadth in the related species, of which the dorsal lobe is small, while in the new species both lobes are broad and equal in width.

FAUNISTIC LIST OF ZONGULDAK AND KARABÜK PROVINCES

RHYACOPHILIDAE

***Rhyacophila alaplica* Sipahiler, 2013**

Distribution: Endemic to Turkey.

Distribution in Turkey: Zonguldak.

Localities: Zonguldak, Alaph, Gümeli, Bölüklü Yaylası, south direction, 41° 42' N/ 31° 39' E, 1176 m, 12.7.2011, 1 male; same place, Bacaklı Yaylası direction, spring, 41° 02' N/ 31° 40' E, 1085 m, 20.9.2011, 2 males; Zonguldak, Alaph, Bölüklü Yaylası, Bacaklı Yaylası direction, 1115 m, 41° 02' N/ 31° 40' E, 20.9.2011, 3 males, 1 female.

***Rhyacophila clavalis* Martynov, 1913**

Distribution: Caucasus, Turkey.

Distribution in Turkey: Northeastern and northwestern Turkey; new for Zonguldak province.

Localities: Zonguldak, Alaph, Gümeli, Bölüklü Yaylası direction, 41° 04' N/ 31° 40' E, 775 m, 24.6.2011, 1 male.

***Rhyacophila fasciata fasciata* Hagen, 1859**

Distribution: Europe, Turkey.

Distribution in Turkey: Northeastern and Northwestern Turkey; new for Zonguldak province.

Localities: Karabük, Yenice direction, Subatan, Bolkuş district, 41° 09' N/ 32° 27' E, 226 m, 13.7. 2011, 1 male, 1 female pupa, 11 prepupae, 4 larva.; : Karabük, Kapullu, Yenice direction,

41° 15' N/ 32° 36' E, 635 m, 14.7.2011, 1 female, 1 prepupa; Karabük, Safranbolu, Bulak, Mencilis Cave, 41° 16' N/ 32° 27' E, 690 m, 21.9.2011, (light), 2 males, 4 females; Zonguldak, Alaph, Gümeli, Bölüklü Yaylası direction, 41° 04' N/ 31° 40' E, 775 m, 20.9.2011, 2 females (pupae).

***Rhyacophila tristis* Pictet, 1834**

Distribution: Europe, Turkey.

Distribution in Turkey: northwestern Turkey; new for Zonguldak province.

Localities: Zonguldak, Alaph, Gümeli, Bölüklü Yaylası, south, 41° 42' N/ 31° 39' E, 1176 m, 12.7.2011, 1 male; Zonguldak, Alaph, Gümeli, Bölüklü Yaylası, Bacaklı direction, 41° 02' N/ 31° 40' E, 1170 m, 12.7.2011, 1 male, same place, 1115 m, 41° 02' N/ 31° 40' E, 20.9.2011, 1 male pupa.

GLOSSOSOMATIDAE

***Glossosoma yigilca* Sipahiler, 1996**

Distribution: Endemic to Turkey.

Distribution in Turkey: Bolu, Yiğilca; new for Zonguldak and Karabük provinces.

Localities: Karabük, Yenice, Yenice Forest, Şeker Kanyonu direction, 41° 06' N/ 32° 22' E, 540 m, 22.6.2011, 1 larva; Zonguldak, Alaph, Gümeli direction, 41° 05' N/ 31° 35' E, 240 m, 21.8.2011, 1 male; Yenice, Yenice Forest, Şeker Kanyonu direction, 41° 06' N/ 32° 22' E, 540 m, 21.8.2011, larva, pupa; Karabük, Kapullu, Baklabostan, Büyükdüz direction, 950 m, 41° 16' N/ 32° 32' E, 23.8.2011, 1 male, 2 larva; Karabük, Yenice direction, Karakaya 41° 13' N/ 3° 2 28' E, 958 m, 20.9.2011, 1 male pupa, 1 female pupa, 3 females and larva; Zonguldak, Alaph, Gümeli, Bölüklü Yaylası direction, 41° 04' N/ 31° 40' E, 775 m, 20.9.2011, 2 larvae.

***Synaapetus anatolicus* Çakan, 1983**

Distribution: Endemic to Turkey.

Distribution in Turkey: Northwestern Turkey, Bolu, Yedigöller (types), Sinop, Samsun, northeastern Turkey, Ordu; southern Turkey, Beyşehir; new for Zonguldak and Karabük provinces.

Localities: Zonguldak, Çaycuma, Çayır Village, Çayır Cave, 41° 27' N/3°1 59' E, 130 m, 23.6.2011, 1 male; Zonguldak, Devrek-Ereğli, direction 41° 14' N/ 31° 50' E, 195 m, source, 23.6.2011, 1 larva; Zonguldak, Alaph, Gümeli, Bölüklü Yaylası direction, 41° 03' N/ 31° 40' E, 1030 m, 24.6.2011, many larvae and pupae; same place, 12.7.2011, 3 pupae, 1 larva; same place, Bacaklı Yaylası direction, 41° 02' N/ 31° 40' E, 1170 m, 12.7.2011, 2 males, 1 female, 3 prepupae, 2 larvae; Karabük, Kapullu, Yenice direction, 41° 15' N/ 32° 36' E, 635 m, 14.7.2011, 6 males, 12 females, larva, pupa; Karabük, Safranbolu, Bulak, Mencilis Cave, 41° 16' N/ 32° 27' E, 690 m, 13.7.2011, 1 male, 14 pupae; Zonguldak, Alaph, Gümeli, Bölüklü Yaylası, south, 41° 42' N/ 31° 39' E, 1176 m, 20.9.2011, 2 males, 1 female; Zonguldak, Alaph, Gümeli, Bölüklü Yaylası, Bacaklı Yaylası direction, 41° 02' N/ 31° 40' E, 1085 m, 20.9.2011, 1 male.

HYDROPTILIDAE

***Hydroptila atargatis* Malicky, 1997**

Distribution: Lebanon, Turkey.

Distribution in Turkey: Southern, eastern and northern Turkey; new for Zonguldak province.

Localities: Zonguldak, Alaph, Gümeli direction, Alaph Stream, 41° 06' N/ 3°1 34' E, 198 m, (light), 12.7.2011, 21 males, 114 females.

***Hydroptila occulta* Eaton, 1873**

Distribution: Europe, central Asia, Turkey.

Distribution in Turkey: southern, eastern, northeastern Turkey; new for Zonguldak and Karabük provinces.

Localities: Karabük, Yenice direction, Subatan, Bolkuş, 41° 09' N/ 32° 27' E, 226 m, 13.7.2011, 1 female; Zonguldak, Alaph-Gümeli direction, Alaph Stream, 41° 06' N/ 3°1 34' E, 198 m, (light), 12.7.2011, 6 females; Zonguldak, Alaph, Gümeli direction, 41° 05' N/ 31° 35' E, 240 m, 21.8.2011, 1 male.

***Stactobia alapllica* Sipahiler, 2012**

Distribution: Endemic to Turkey.

Distribution in Turkey: Zonguldak.

Localities: Turkey, Zonguldak, Alaplı, Gümeli, Bölüklü Yaylası direction, 41° 04' N/ 31° 39' E, 690 m, 12.7.2011, 5 males, 1 female; same place, 21.8.2011, 4 males, 3 females; 20.9.2011, 1 female.

***Stactobia yenicensis* Sipahiler, 2012**

Distribution: Endemic to Turkey.

Distribution in Turkey: Karabük.

Localities: Karabük, Yenice, Karakaya, 41° 13' N / 32° 28' E, 958 m, 21.9.2011, 1 male, 1 female.

PTILOCOLEPHIDAE

***Ptilocolepus colchicus* Martynov, 1913**

Distribution: Caucasus, Iran, Turkey.

Distribution in Turkey: Northern Turkey; new for Zonguldak and Karabük provinces.

Localities: Zonguldak, Alaplı, Gümeli, Bölüklü Yaylası, Bacaklı Yaylası direction, source, 41° 02' N/ 31° 40' E, 1290 m, 12.7.2011, 2 males; Karabük, Yenice direction, Subatan, Bolkuş district, 41° 09' N/ 32° 27' E, 226 m, 13.7. 2011, 3 males, 2 females; Zonguldak, Alaplı, Gümeli direction, 41° 05' N/ 31° 35' E, 240 m, 21.8.2011, 1 male; Karabük, Kapullu, Baklabostan, 41 17 N/ 32 33 E, source, 1207 m, 23.8.2011, 1male; Zonguldak, Alaplı, Gedikli, 21.8.2011, 3 males, 8 females.

***Ptilocolepus dilatatus* Martynov, 1913**

Distribution: Caucasus, Turkey.

Distribution in Turkey: Northern Turkey.

Localities: Zonguldak, Devrek-Ereğli direction, 41° 14' N/ 31° 50' E, 195 m, source, 23.6.2011, 3 males, 1 females; Zonguldak, Alaplı, Gümeli direction, 41° 05' N/ 31° 35' E, 240 m, 21.8.2011, 1. male, Yenice, Yenice Forest, Şeker Kanyonu direction, 41° 06' N/ 32° 22' E, 540 m, 21.8.2011, 1 male; Karabük, Kapullu, Baklabostan, Büyükdüz direction, 950 m, 41° 16' N/ 32° 32' E, 23.8.2011, 2 males, Zonguldak, Alaplı, Gümeli, Bölüklü Yaylası direction, 41° 04' N/ 31° 40' E, 775 m, 25.6.2011, 1 male; Zonguldak, Alaplı, Gedikli, 21.8.2011, 7 males; Karabük, Kapullu, Yenice direction, Başköy, 41° 16' N/ 32° 33' E, 830 m, 23.8.2011, 5 males, 4 females; Alaplı, Bölüklü, 20.9.2011, 1 male.

PHILOPOTAMIDAE

***Philopotamus montanus* (Donovan, 1813)**

Distribution: Europe, Turkey.

Distribution in Turkey: Marmara region; new for Zonguldak and Karabük provinces.

Localities: Zonguldak, Alaplı, Gümeli, Bölüklü Yaylası, Bacaklı Yaylası direction, 41° 02' N/ 31° 40' E, 1170 m, 12.7.2011, 1 larva; Zonguldak, Alaplı, Gümeli, Bölüklü Yaylası direction, 41° 03' N/ 31° 40' E, 1030 m, 24.6.2011, 1 male, same place, 12.7.2011:1 male, 1 female pupa; Zonguldak, Alaplı, Gümeli, Bölüklü Yaylası, 41° 02' N/ 31° 40' E, 1075 m, 24.6.2011, 1 erkek, 1 female pupa, larva; Zonguldak, Alaplı, Gümeli, Bölüklü Yaylası direction, 41° 04' N/ 31° 40' E, 775 m, 20.9.2011, 1 female.

***Wormaldia balcanica* Kumanski, 1979**

Distribution: Balkans, Turkey.

Distribution in Turkey: Marmara Region; northern Turkey; new for Zonguldak and Karabük provinces.

Localities Zonguldak, Alaplı, Gümeli, Bölüklü Yaylası direction, 41° 03' N/ 31° 40' E, 910 m, 24.6.2011, 2 males, 1 female; Karabük, Yenice, Yenice Forest, a tributary of Şimşir Stream, 41° 08' N/ 32° 21' E, 486 m, 22.6.2011, 1 male.

POLYCENTROPODIDAE

***Polycentropus flavomaculatus* (Pictet, 1834)**

Distribution: Europe, Turkey.

Distribution in Turkey: Marmara region; northern Turkey, new for Karabük province.

Localities: Karabük, Yenice, Karakaya, 41° 13' N / 32° 28' E, 958 m, 21.9.2011, 1 male.

***Plectrocnemia latissima* Martynov, 1913**

Distribution: Caucasus, Iran, Turkey.

Distribution in Turkey: Northern and eastern Turkey, new for Karabük province.

Localities: Karabük, Safranbolu, Bulak, Mencilis Stream, 41° 16' N/ 32° 27' E, 690 m, 24.8.2011, 1 male; same place, 21.9.2011 (light), 5 males, 2 females.

PSYCHOMYIIDAE

***Lype reducta* (Hagen, 1868)**

Distribution: Europe, Iran, Turkey.

Distribution in Turkey: Marmara region; northern Turkey, new for Zonguldak province.

Localities: , Zonguldak, Çaycuma, Çayır Village, Çayır Stream, 41° 27' N/3°1 59' E, 130 m, 22.8.2011, 1 male.

***Psychomyia mungenensis* Sipahiler, 2006**

Distribution: Endemic to Turkey.

Distribution in Turkey: North western, western and southern Turkey.

Localities: Zonguldak, Devrek, Karasu, 23.9.2003 (Sipahiler, 2006).

***Psychomyia pusilla* (Fabricius, 1781)**

Distribution: Europe to Iran, North Africa, Levant, Turkey.

Distribution in Turkey: Largely distributed in Turkey. , new for Zonguldak and Karabük provinces.

Localities: Karabük, Yenice, Karakaya, 41° 13' N / 32° 28' E, 958 m, 21.9.2011, 1 male, 1 female; Zonguldak, Alaph, Gümeli direction, 41° 05' N/ 31° 35' E, 240 m, 21.8.2011, 1 male, 7 female.

***Tinodes yuecelaskini* Sipahiler, 1995**

Distribution: Endemic to Turkey.

Distribution in Turkey: North western Turkey.

Localities: Karabük, Yenice, Yenice Forest, Şeker Kanyonu direction, 41° 11' N/ 32° 21' E, 534 m, 22.6.2011, 1 male; same place, 21.8.2011, 3 males, 1 female; Zonguldak, Çaycuma, Çayır Village, Çayır Cave, 41° 27' N/ 31° 59' E, 130 m, 23.6.2011, 1 male, 5 females; same place, 22.8.2011, 1 male.

HYDROPSYCHIDAE

***Diptectrona atra* McLachlan, 1878**

Distribution: Europe, Turkey.

Distribution in Turkey: Western and central Turkey, new for Zonguldak and Karabük provinces.

Localities: Zonguldak, Çaycuma, Çayır Village, Çayır Cave, 41° 27' N/3°1 59' E, 130 m, 23.6.2011, 2 males, 1 female; Zonguldak, Devrek, Ereğli direction, 41° 14' N/ 31° 50' E, 195 m, source, 23.6.2011, 1 male; Karabük, Safranbolu, Bulak, Mencilis, 41° 16' N/ 32° 27' E, 690 m, 13.7.2011, 3 males; Karabük, Kapullu, Yenice direction, Başköy, 41° 16' N/ 32° 34' E, 940 m, 14.7.2011, 1 male; Yenice, Yenice Forest, Şeker Kanyonu direction, 41° 06' N/ 32° 22' E, 540 m, 21.8.2011, 2 females; Karabük, Kapullu, Baklabostan district, Büyükdüz direction, 950 m, 41° 16' N/ 32° 32' E, 23.8.2011, 1 female.

***Hydropsyche pellucidula* (Curtis, 1834)**

Distribution: Europe, Turkey.

Distribution in Turkey: Northern Turkey, new for Zonguldak and Karabük provinces.

Localities: Zonguldak, Alaph, Gedikli, 21.8.2011, (light), 1 male.

***Hydropsyche contubernalis* McLachlan, 1865**

Distribution: Europe to Siberia, central Asia, Turkey.

Distribution in Turkey: Northern Turkey.

Localities: Zonguldak, Devrek, Devrek Stream, 220 m, 18.4.2004 (Sipahiler, 2007).

***Hydropsyche kebab* Malicky, 1974**

Distribution: Endemic to Turkey.

Distribution in Turkey: Largely distributed in Turkey, new for Karabük province.

Localities: Karabük, Safranbolu, Bulak, Mencilis, 41° 16' N/ 32° 27' E, 690 m, 22.8.2011, (light), 1 male; same place, 24.8.2011, 2 males, 2 females; 21.9.2011, (light), 1 male, 5 females.

***Hydropsyche mahrkusha* Schmid, 1959**

Distribution: Iran, Turkey.

Distribution in Turkey: Northeastern Turkey. , new for Karabük province.

Localities: Karabük, Kapullu, Yenice direction, 41° 15' N/ 32° 36' E, 600 m, 14.7.2011, 1 male.

BACHYCENTRIDAE

***Micrasema mencilis* Sipahiler, 1995**

Distribution: Endemic to Turkey.

Distribution in Turkey: Northwestern Turkey.

Localities: Karabük, Safranbolu, Bulak, Mencilis, (types) (Sipahiler, 1995).

UENOIDAE***Themna anomalum* McLachlan, 1876**

Distribution: Southeast Europe, Turkey.

Distribution in Turkey: Northern Turkey, new for Karabük province.

Localities: Karabük, Safranbolu, Bulak, Mencilis Cave, 41° 16' N/ 32° 27' E, 690 m, 13.7.2011, 4 males.

GOERIDAE***Lithax musaca* Malicky, 1972**

Distribution: Bulgaria, Turkey.

Distribution in Turkey: Northern and southern Turkey.

Localities: Karabük, Yenice, Yenice Forest, Şeker Kanyonu direction, 41° 06' N/ 32° 22' E, 540 m, 22.6.2011, larvae; Zonguldak, Çaycuma, Çayır Village, stream of Çayır Cave, 41° 27' N/ 31° 59' E, 130 m, 23.6.2011, 1 male; Zonguldak, Alaplı, Gümeli, Bölüklü Yaylası, 41° 02' N/ 31° 40' E, 1075 m, 24.6.2011, 1 female; same place: 12.7.2011, 1 male; Karabük, Safranbolu, Bulak, Mencilis, 41° 16' N/ 32° 27' E, 690 m, 13.7.2011, larvae.

LIMNEPHILIDAE**DRUSINAE*****Drusus demirsoyi* Cakan, 1983**

Distribution: Endemic to Turkey.

Distribution in Turkey: Northwestern Turkey; new for Zonguldak province.

Localities: Zonguldak, Alaplı, Gümeli, Bölüklü Yaylası direction, 41° 03' N/ 31° 40' E, 1030 m, 24.6.2011, 1 male, 1 female; same place, 12.7.2011, 1 larva; Zonguldak, Alaplı, Gümeli, Bölüklü Yaylası, Bacaklı Yaylası direction, spring, 41° 02' N/ 31° 40' E, 1085 m, 20.9.2011, 1 male.

LIMNEPHILINAE***Limnephilus ponticus* McLachlan, 1898**

Distribution: Endemic to Turkey.

Distribution in Turkey: Largely distributed in Turkey; new for Zonguldak province.

Localities: Zonguldak, Alaplı, Gümeli, Bölüklü Yaylası, 41° 02' N/ 31° 40' E, 1075 m, 24.6.2011, 1 male, 1 female, same place, 12.7.2011, 1 male, 2 females.

***Limnephilus hirsutus* (Pictet, 1834)**

Distribution: Europe, Turkey.

Distribution in Turkey: Largely distributed in Turkey; new for Zonguldak province.

Localities: Zonguldak, Alaplı, Gümeli, Bölüklü Yaylası, 41° 02' N/ 31° 40' E, 1075 m, 12.7.2011, 2 females.

***Potamophylax latipennis* (Curtis, 1834)**

Distribution: Europe, Turkey.

Distribution in Turkey: Northeastern, eastern Anatolia, Marmara region; new for Karabük province.

Localities: Turkey, Karabük, Baklabostan, 41° 17' N/ 32° 33' E, 1223 m, 23.8.2011, 1 female pupa.

***Potamophylax pallidus* Klapalek, 1899**

Distribution: Europe, Turkey.

Distribution in Turkey: Zonguldak, Alaplı, Bacaklı. New record for Turkey.

Localities: Zonguldak, Alaplı, Bacaklı, 21.8.2011, 1 female pupa.

CHAETOPTERYGİNİ***Chaetopteryx nalanae* Sipahiler, 1996**

Distribution: Endemic to Turkey.

Distribution in Turkey: Northwestern Turkey, new for Zonguldak province.

Localities: Karabük, Safranbolu, Bulak, Mencilis, 41° 16' N/ 32° 27' E, 690 m, 22.10.2011, 1 female; Karabük, Kapullu, Yenice direction, 41° 15' N/ 32° 36' E, 635 m, 22.10.2011, 2 females.

SERICOSTOMATIDAE***Schzopelex yenicensis* Sipahiler & Pauls, 2012**

Distribution: Endemic to Turkey.

Distribution in Turkey: Karabük.

Localities: Karabük, Yenice yolu, Subatan, Bolkuş district, 41° 09' N/ 32° 27' E, 226 m, 13.7.2011, 1 male (Holotype), leg. S. Pauls, coll. Senckenberg Museum, Germany.

ODONTOCERIDAE***Odontocerum turcicum* sp. n.**

Distribution: Endemic to Turkey.

Distribution in Turkey: Zonguldak.

Localities: Zonguldak, Alaplı, Gedikli, Bölüklü Yaylası, Tavuk Villace direction, 917 m, 41° 02' N/31° 37' E, 16.8.2013, 1 male, 1 female (Types).

LEPTOCERIDAE***Adicella altandroconia* Botosaneanu & Novak, 1965**

Distribution: Bulgaria, Turkey.

Distribution in Turkey: Northwestern Turkey; new for Zonguldak province.

Localities: Zonguldak, Çaycuma, Çayır Village, Çayır Cave, 41° 27' N/31° 59' E, 130 m, 23.6.2011, 3 males, 3 females; Zonguldak, Devrek, Beycuma direction, Yılanlıca, Yılanlıca Stream, 41° 16' N/31° 58' E, 96 m, 23.6.2011, 1 female; Zonguldak, Devrek, Beycuma, a tributary of Yılanlıca Stream, 41° 16' N/31° 58' E, 140 m, 23.6.2011, 1 male; Zonguldak, Devrek-Ereğli direction, Vakıf Village, 41° 14' N/ 31° 50' E, 195 m, spring, 23.6.2011, 1 female; same place, 13.7.2011, 3 males, 1 female.

***Adicella syriaca* Ulmer, 1907**

Distribution: Bulgaria, Greece, Levant, Turkey.

Distribution in Turkey: Northwestern, northeastern, southern, western and central Turkey; new for Zonguldak province.

Localities: Zonguldak, Çaycuma, Çayır Village, Çayır Cave, 41° 27' N/31° 59' E, 130 m, 23.6.2011, 1 female; Zonguldak, Devrek, Beycuma, Yassıören, Yılanlıca direction, a tributary of Devrek Stream, 41° 15' N/ 31° 58' E, 87 m, 23.6.2011, 1 male, 1 female.

***Athripsodes bilineatus* (Linnaeus, 1758)**

Distribution: Europe, Turkey.

Distribution in Turkey: Marmara Region; new for Zonguldak and Karabük provinces.

Localities: Zonguldak, Çaycuma, Çayır Village, Çayır Cave, 41° 27' N/31° 59' E, 130 m, 23.6.2011, 1 male; Karabük, Kapullu, Yenice direction, Başköy, 41° 15' N/ 32° 36' E, 600 m, 14.7.2011, 5 males, 2 females.

BERAEIDAE***Beraea walteri* Malicky, 1975**

Distribution: Cyprus, Turkey.

Distribution in Turkey: Northwestern, northeastern and southern Turkey.

Localities: Karabük, Yenice direction, 540 m, 41° 06' N / 32° 22' E, 22. 6. 2011, 1 male, 1 female, 1 larva.

***Beraea tschundra* Malicky, 1977**

Distribution: Cyprus, Turkey.

Distribution in Turkey: Western Turkey; new for Zonguldak province.

Localities: Zonguldak, Alaplı, Gümeli, Bölüklü Yaylası direction, 41° 04' N/ 31° 40' E, 775 m, 24.6.2011, 2 males.

***Beraemyia devrekensis* Sipahiler, 2005**

Distribution: Endemic to Turkey.

Distribution in Turkey: Northwestern Turkey.

Localities: Bolu, near Zonguldak province border, 20 km south of Devrek, Karasu II, 400 m, 11.VII.2003, 41° 10' N / 31° 54' E, 1 male (Sipahiler, 2005).

***Ernodes abanticus* Sipahiler, 1983**

Distribution: Endemic to Turkey.

Distribution in Turkey: Northwestern Turkey.

Localities: Zonguldak, Alaplı, Gümeli, Bölüklü Yaylası direction, 41° 03' N/ 31° 40' E, 910 m, 24.6.2011, 1 male; Zonguldak, Alaplı, Gümeli, Bölüklü Yaylası, 41° 03' N/ 31° 39' E, 1197 m, 12.7.2011, 2 males, 1 female; Zonguldak, Alaplı, Gümeli, Bölüklü Yaylası, Bacaklı Yaylası direction, source, 41° 02' N/ 31° 40' E, 1290 m, 12.7.2011, 4 males.

***Ernodes anatolicus* Sipahiler, 1983**

Distribution: Endemic to Turkey.

Distribution in Turkey: Central Anatolia; new for Zonguldak and Karabük provinces.

Distribution in Turkey: Northwestern Turkey.

Localities: Karabük, Yenice direction, Subatan, Bolkuş district, 32° 27' E, 226 m, 13.7. 2011, 35 males, 5 females; Safranbolu, Bulak, Mencilis, 41° 16' N/ 32° 27' E, 690 m, 13.7.2011, 1

male; Zonguldak, Alaplı, Gümeli, Bölüklü Yaylası, Bacaklı Yaylası direction, spring, 41° 02' N/ 31° 40' E, 1085 m, 12.7.2011, 2 males pupae, 8 dişi pupa, 3 prepupa.

HELICOPSYCHIDAE

***Helicopsyche bacesqui* Orghidan & Botosaneanu, 1953**

Distribution: Southeastern Europe, Turkey.

Distribution in Turkey: Marmara Region, Northwestern Turkey; new for Zonguldak and Karabük provinces.

Localities: Karabük, Yenice, Yenice Ormanı, tributary of Şimşir Stream, 41° 08' N/ 32° 21' E, 486 m, 22.6.2011, 1 male, 9 pupae; Karabük, Yenice, Yenice Forest, Şeker Kanyonu direction, 41° 06' N/ 32° 22' E, 540 m, 22.6.2011, 2 males, 3 pupae; : Zonguldak, Devrek-Ereğli direction, 41° 14' N/ 31° 50' E, 195 m, source, 23.6.2011, 1 female; Karabük, Kapullu, Yenice direction, Başköy, 41° 16' N/ 32° 34' E, 940 m, 14.7.2011, 1 male, 1 female.

LEPIDOSTOMATIDAE

***Dinarthrum iranicum* Schmid, 1959**

Distribution: Iran, Turkey.

Distribution in Turkey: Northwestern Turkey; new for Zonguldak and Karabük provinces.

Localities: Zonguldak, Alaplı, Gümeli, Bölüklü Yaylasıdirection, 41° 03' N/ 31° 40' E, 910 m, 24.6.2011, 1 male; Karabük, Safranbolu, Bulak, Mencilis, 41° 16' N/ 32° 27' E, 690 m, 13.7.2011, 5 females; Karabük, Kapullu, Yenice direction, 41° 15' N/ 32° 36' E, 635 m, 14.7.2011, 1 female.

CALAMOCERATIDAE

***Calamoceras illiesi* Malicky & Kumanski, 1974**

Distribution: Balkans, Carpathians Turkey.

Distribution in Turkey: Northwestern Turkey; new for Karabük province.

Localities: Karabük, Yenice, Karakaya 41° 13' N, 32° 28' E, 23.8.2011, 958 m, 1 larva; Karabük, Kapullu, Yenice direction, Başköy, 41° 16' N/ 32° 33' E, 830 m, 23.8.2011, 1 male; Karabük, Kapullu, Baklabostan Külocağı Stream, 21.9.2011, 940 m, 3 larvae, 3 pupae, 2 males; same place, 21.9.2011, 1 larva; 22.10.2011, 1 larva; Karabük, Kapullu, Yenice direction, 41° 15' N/ 32° 36' E, 635 m, 14.7.2011, 1 female.

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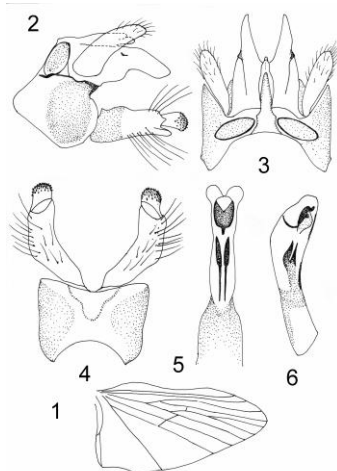
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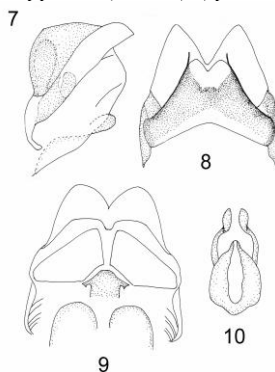
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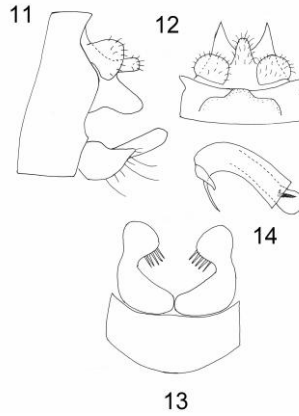
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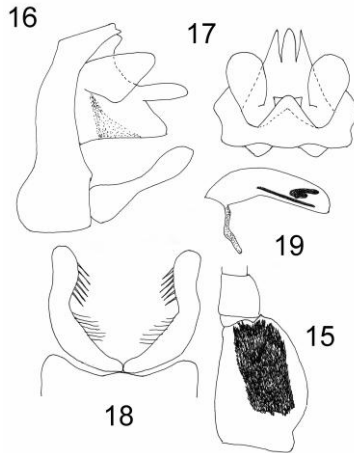
Figures 1–6: *Odontocerum turcicum* sp. n. 1, male fore wing; 2–6: Male genitalia: 2, lateral, 3, dorsal; 4, ventral; 5, phallic apparatus, dorsal; 6, phallic apparatus, lateral view.



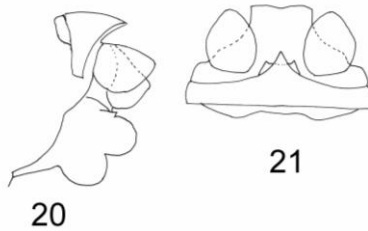
Figures 7–10: *Odontocerum turcicum* sp. n. female genitalia: 7, lateral; 8, dorsal; 9, ventral; 10, bursa copulatrix, ventral view.



Figures 11–14: *Adicella hadimensis* sp. n. male genitalia: 11, lateral; 12, dorsal; 13, ventral; 14, phallic apparatus, lateral view.



Figures 15–19: *Adicella kayserica* sp. n. 15: male right scapus; 16–19: Male genitalia: 16, lateral; 17, dorsal; 18, ventral; 19, phallic apparatus, lateral view.



Figures 20, 21: *Adicella kayserica* sp. n. female genitalia: 20, lateral; 21 dorsal view.